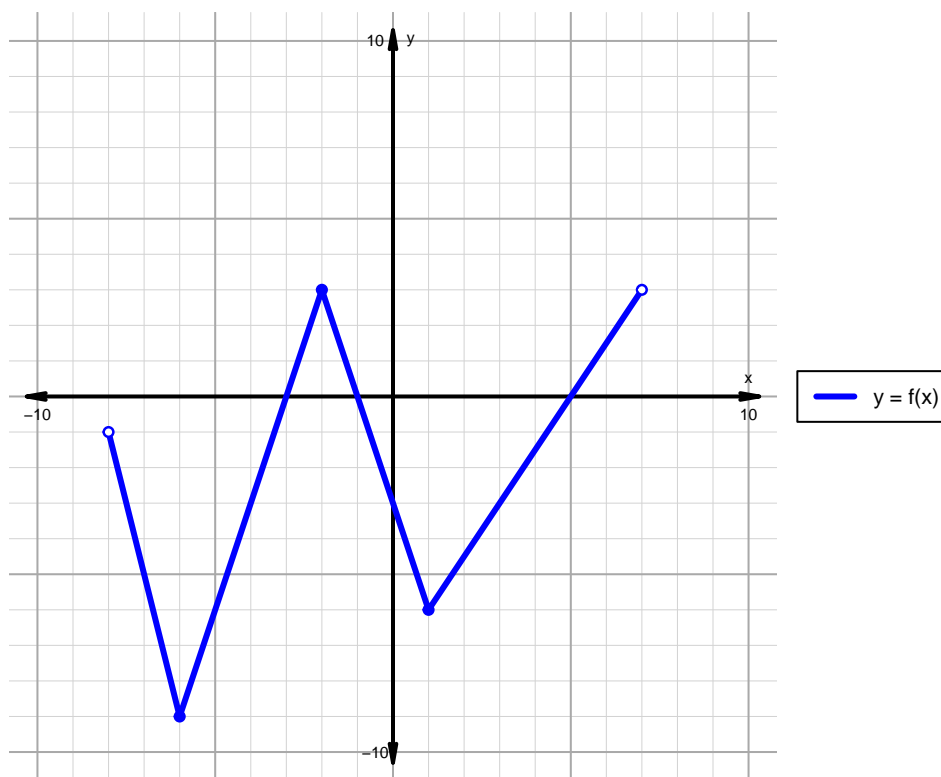


Name: _____

Date: _____

Intervals, Transformations, and Slope Solution (version 42)

1. The function f is graphed below.

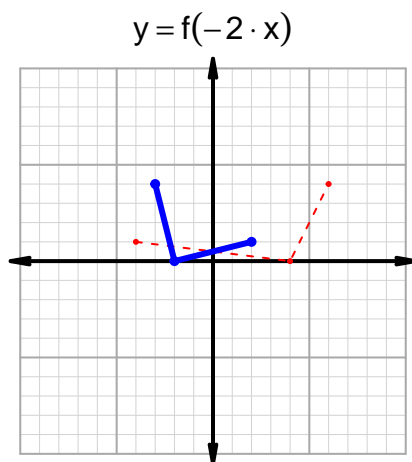
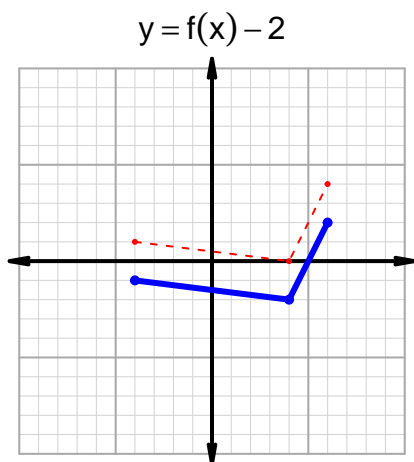
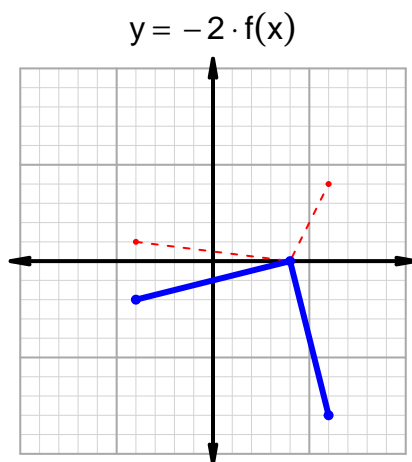
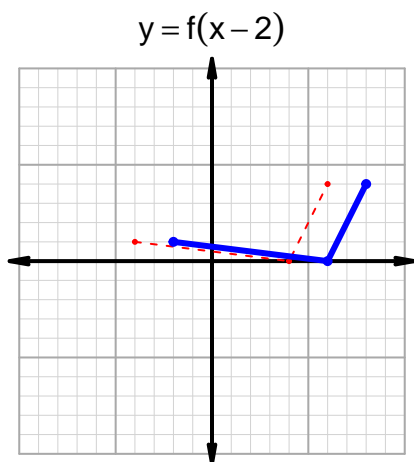


Indicate the following intervals using interval notation. Remember, you can use \cup between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-3, -1) \cup (5, 7)$
Negative	$(-8, -3) \cup (-1, 5)$
Increasing	$(-6, -2) \cup (1, 7)$
Decreasing	$(-8, -6) \cup (-2, 1)$
Domain	$(-8, 7)$
Range	$(-9, 3)$

Intervals, Transformations, and Slope Solution (version 42)

2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$ to find the average rate of change between $x_1 = 45$ and $x_2 = 63$. Express your answer as a reduced fraction.

x	$g(x)$
45	76
61	45
63	61
76	63

$$\frac{f(63) - f(45)}{63 - 45} = \frac{61 - 76}{63 - 45} = \frac{-15}{18}$$

The greatest common factor of -15 and 18 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-5}{6}$$